

AMENDMENT UNDER 37 C.F.R. § 1.312
U.S. Application No. 10/705,251
Attorney Docket No. Q78440

wherein said precursor is irradiated with an ion beam at least once following said degreasing in said step of forming said ferroelectric film.

3. 42. (Currently amended) The method for manufacturing a ferroelectric device according to claim 40-claim *42* or claim 41, wherein said ferroelectric film contains a solid solution of $\text{PMN}_y\text{-PZT}_{1-y}$ consisting of a relaxer material PMN comprising any of the compounds $\text{Pb}(\text{M}_{1/3}\text{N}_{2/3})\text{O}_3$ ($\text{M} = \text{Mg, Zn, Co, Ni, Mn; N} = \text{Nb, Ta}$), $\text{Pb}(\text{M}_{1/2}\text{N}_{1/2})\text{O}_3$ ($\text{M} = \text{Sc, Fe, In, Yb, Ho, Lu; N} = \text{Nb, Ta}$), $\text{Pb}(\text{M}_{1/2}\text{N}_{1/2})\text{O}_3$ ($\text{M} = \text{Mg, Cd, Mn, Co; N} = \text{W, Re}$) or $\text{Pb}(\text{M}_{2/3}\text{N}_{1/3})\text{O}_3$ ($\text{M} = \text{Mn, Fe; N} = \text{W, Re}$) or mixed phases of these compounds, and $\text{Pb}(\text{Zr}_x\text{Ti}_{1-x})\text{O}_3$ (PZT, $0.0 \leq x \leq 1.0$), and is oriented in any of the orientations of a cubic crystal (100), tetragonal crystal (001), rhombohedral crystal (100) or quasi-cubic crystal (100).

42. 43. (Previously presented) A method for manufacturing a ferroelectric device, the method comprising:

forming a bottom electrode on a substrate by an ion beam assist method, wherein by irradiating ion beams on the bottom electrode, said bottom electrode has a specific crystal orientation;

forming a ferroelectric film on top of said bottom electrode by an ion beam assist method, wherein by irradiating ion beams on the ferroelectric film, said ferroelectric film has a specific crystal orientation; and

forming a top electrode on top of said ferroelectric film.